

CLAIMS

What is claimed is:

Sub 1

Sub 2

1. A communication system, comprising:
 - a probe, the probe transmitting a modulated radio frequency request signal and receiving a modulated radio frequency response signal in response thereto;
 - a vehicle spaced from the probe;
 - a tag attached to a component of the vehicle, the tag displaying a registration of the vehicle, receiving the modulated radio frequency request signal and transmitting the modulated radio frequency response signal corresponding thereto.
2. A system as recited in claim 1, wherein the vehicle component is a vehicle license plate.
3. A system as recited in claim 1, wherein the registration of the vehicle is a renewable state department of motor vehicle registration.
4. A system as recited in claim 1, wherein the tag comprises transceiving circuitry for processing the modulated radio frequency request signal and generating the modulated radio frequency response signal.

5. A system as recited in claim 4, wherein the transceiving circuitry is low duty cycle micropower monolithic microwave integrated circuitry (MMIC).

6. A system as recited in claim 5, wherein the low duty cycle micropower monolithic microwave integrated circuitry (MMIC) comprises a low-power battery.

Sub A & T
7. A system as recited in claim 5, wherein the low duty cycle micropower monolithic microwave integrated circuitry (MMIC) comprises a microprocessor unit.

8. A system as recited in claim 5, wherein the low duty cycle micropower monolithic microwave integrated circuitry (MMIC) further comprises a real time clock.

9. A system as recited in claim 5, wherein the low duty cycle micropower monolithic microwave integrated circuitry (MMIC) further comprises a memory device.

10. A system as recited in claim 4, wherein the transceiving circuitry is digitally controlled integrated circuitry.

11. A system as recited in claim 4, wherein the transceiving circuitry is surface acoustic wave (SAW) coded delay line filter circuitry.

12. A system as recited in claim 4, wherein the transceiving circuitry is a non-linear element having a resonant antenna for generating and retransmitting harmonic energy.

13. A system as recited in claim 1, wherein the tag comprises an omni-directional antenna for receiving the modulated radio frequency request signal and transmitting the modulated radio frequency response signal.

14. A system as recited in claim 1, wherein the tag further comprises a sensor for measuring an axial acceleration of the vehicle.

15. A system as recited in claim 14, wherein the sensor is a micro electro mechanical system (MEMS) accelerometer.

16. A system as recited in claim 1, wherein the probe comprises radio frequency and signal processing circuitry for generating the modulated radio frequency request signal and processing the modulated radio frequency response signal.

17. A system as recited in claim 1, wherein the probe comprises an antenna for transmitting the modulated radio frequency request signal and receiving the modulated radio frequency response signal.

18. A system as recited in claim 1, wherein the probe is mobile.

19. A system as recited in claim 1, wherein the probe is stationary.

20. A system as recited in claim 1, wherein the modulated RF response signal is modulated with data containing an identification of the vehicle.

21. A system as recited in claim 1, wherein the modulated RF response signal is modulated with data for determining a location, a speed and a direction of the vehicle.

22. A communication system, comprising:

- a first vehicle;
- a first probe located on the first vehicle, the first probe transmitting a first modulated radio frequency request signal and receiving a first modulated radio frequency response signal in response thereto;
- a second probe located on the first vehicle, the second probe transmitting a second modulated radio frequency request signal and receiving a second modulated radio frequency response signal in response thereto;
- a second vehicle spaced from the first vehicle;
- a tag attached to the second vehicle, the tag displaying a registration of the second vehicle, receiving the first modulated radio frequency request signal and the second modulated radio frequency request signal, transmitting the first modulated radio frequency response signal in response to the first modulated radio frequency request signal, and transmitting the second modulated radio frequency response signal in response to the second modulated radio frequency request signal, the first and second modulated radio frequency response signals each having a transmission delay; and

a processor unit connected to the first and the second probe, the processor unit determining a location of the first vehicle relative to the second vehicle using the transmission delay of each of the first and second radio frequency modulated response signals.

Add As